By THAE S. PARK

Federal Personal Income Taxes: Liabilities and Payments, 1975-78

A series on quarterly Federal personal income tax liabilities for 1949–76 was presented in the May 1978 SURVEY OF CURRENT BUSINESS. Such a series provides an alternative to the payment series that is included in the National income and product accounts (NIPA's). This article presents revised 1975 and 1976 liability estimates and extends the series to 1978. It also briefly describes the methodologies underlying the payment and liability series and the differences between the two series.

The NIPA's record personal taxes on a payment basis, that is, at the time payments are made by individuals. It has been argued that to record personal taxes on a liability basis, that is, at the time taxpayers earn their income, is more appropriate than a payment basis for analyzing the impact of taxes on consumer behavior and fiscal policy. When personal income increases rapidly, as it has in recent years, liabilities may exceed payments by a significant amount. Consequently, under these conditions disposable personal income, personal saving, and the budget deficit all tend to be reduced by substitution of a liability series for a payment series.

Withheld taxes on wages and salaries and additional payments received by the Treasury in the form of quarterly payments of estimated tax may be thought of as approximations of liabilities but, for two reasons, they are not good approximations. First, the amount withheld exceeds liability for most taxpayers in any year as evidenced by refunds made on approximately three-fourths of all returns filed. Second, although tax law provisions usually are effective from the beginning of the tax year, which is January 1 for most individuals, associated changes in withholding rates typically occur later. Consequently, liabilities rarely correspond to payments in the first calendar year of a tax law change.

Methodology: payment series

Most wage earners make Federal tax payments through employer withholdings. These payments, along with Federal Insurance Contributions Act (FICA) payments, are deducted from wages and salaries by employers and deposited in Federal tax and loan accounts at the Federal Reserve banks. When the Federal Reserve banks notify the Treasury of the deposits, personal tax collections are recorded by the Treasury. The time lag between payments by individuals and collections by the Treasury varies from 3 days for large employers to about 1 month for small ones. The NIPA payment series is constructed from Treasury collections data by correcting for the time lag between payments and collections. First, quarterly estimates of the combined collections of withheld income taxes and FICA payments are converted to a payments basis by adjusting for the time lag. Next, the FICA component is estimated by use of data on taxable wages supplied by the Social Security Administration and subtracted from the combined payments to arrive at the quarterly payment series of withheld income taxes before seasonal adjustment. The quarterly unadjusted series is summed to obtain annual totals. The seasonally adjusted series is derived by allocating these totals to quarters, largely in proportion to seasonally adjusted wages and salaries. Until the annual total for withheld income taxes becomes available, the quarterly series is estimated by multiplying wages and salaries by an estimated effective tax rate derived from Treasury estimates prepared for the annual Federal budget.

Treasury data for nonwithheld income tax collections and tax refunds are used, without adjustments, for payments because timing differences between payments and receipts are considered insignificant. Both nonwithheld income tax collections and refund payments are seasonally adjusted by allocating annual totals to quarters, with allowance for legislative tax changes. In the case of a permanent legislative tax change, the seasonally adjusted series moves to a new level in the first quarter of the calendar year and continues with a smooth pattern. In the case of a temporary change, the series reflects the underlying unadjusted data. For example, a one-time rebate is not allocated to each of the quarters, but is recorded in the quarter paid. The final income tax series is the sum of withheld and nonwithheld payments, less refunds. It is the major component of the personal tax and nontax series in the NIPA's.[1] (See the May 1978 SURVEY for a more detailed discussion of the methodology.)

Methodology: liability series

The personal income tax liability series is based on annual taxable income and tax liabilities published by the Internal Revenue Service (IRS) in *Statistics of Income, Individual Income Tax Returns* (SOI). The SOI data are estimated from a stratified systematic

1. The other components, estate and gift taxes and nontaxes, are much smaller. Their conversion to a liability basis would produce only minor changes from the published estimates in most years.

sample of unaudited individual income tax returns filed during a given calendar year.

SOI liability is on an annual basis and exclusive of liability changes occurring after initial returns are filed. The estimate of liability consistent with the NIPA's is on a quarterly basis and inclusive of liability changes resulting from audits, amended returns, and other additional assessments. There are additional differences between the NIPA liability and SOI liability. (1) NIPA liability includes fiduciary tax liability, but SOI liability does not; (2) NIPA liability excludes all liabilities associated with social security tax, but SOI liability includes the self-employment social security tax and social security taxes on tip income; and (3) NIPA liability adjusts for undercoverage of SOI data.

The method for generating the quarterly NIPA liability is an extension of the method used to reconcile annual personal income with annual taxable income. (See the December 1976 SURVEY for a detailed discussion of this reconciliation.) First, a quarterly BEA adjusted gross income (BEA–AGI) series is constructed from quarterly personal income by adjusting for conceptual and accounting differences and adding in the portion of SOI adjusted gross income (SOI–AGI) not included in personal income. The quarterly BEA–AGI series is used to allocate SOI–AGI annual totals to quarters. Next, quarterly estimates of deductions and exemptions are subtracted and quarterly estimates of negative taxable income and the unused zero bracket amount (discussed later) are added to the quarterly SOI–AGI to derive quarterly taxable income.

Prior to 1977, quarterly taxable income was derived by subtracting deductions and exemptions from AGI. However, the Tax Reduction and Simplification Act of 1977 (1977 Act) changed the definition of taxable income so that it is no longer comparable to that used in prior years. For 1977 and thereafter, taxable income is derived by subtracting from AGI excess itemized deductions and exemptions, and adding the unused zero bracket amount. Excess itemized deductions and exemptions as well as the unused zero bracket amount are defined relative to the zero bracket amount. The zero bracket amount is part of taxable income and is taxed at the zero-percent tax rate. It replaced the standard deduction in effect for 1976 and earlier years and varies with the taxpayer's filing status. (In 1977, it was $3,200 for married taxpayers filing jointly and for surviving spouses, $2,200 for single persons and for heads of households, and $1,600 for married taxpayers filing separately.) Excess itemized deductions are the amount by which total itemized deductions exceed the zero bracket amount. The unused zero bracket amount arises because the 1977 Act requires certain taxpayers to itemize their deductions. The unused zero bracket amount is the amount by which the zero bracket amount exceeds total deductions for these taxpayers.

A series comparable to the old definition of taxable income can be constructed from the new one by subtracting the zero bracket amounts on returns with itemized deductions and on returns with zero bracket amount only:

[Billions of dollars]

Taxable income on all returns (1977)	596.4
Less: Zero bracket amount on returns with itemized deductions	67.5
Zero bracket amount on returns with zero bracket amount only	137.0
Equals: Taxable income on all returns (old definition)	731.4

Effective tax rate.—The estimates of quarterly taxable income derived from the quarterly SOI–AGI are used to obtain quarterly effective tax rates. First, an annual effective tax rate is calculated by dividing income tax before credits by taxable income, both from SOI. Table 1 shows the annual effective tax rates for 1949–78. Because the U.S. tax structure is progressive, the effective tax rate is expected to rise with rising income. Any legislative changes making the tax system more progressive tend to make the effective tax rate rise faster with income. This was apparently the case with the Tax Reduction Act of 1964, which split the $2,000 bottom brackets into four $500 brackets subject to progressively increasing tax rates. Numerous tax reductions and tax changers since then have made the tax system on balance more progressive. These tax revisions, together with a rapid rise in personal income in the 1970's, have contributed to a rapid rise in the effective tax rate during the period. The increase in the effective tax rate from 1977 to 1978 was especially large—almost one-percentage-point. The introduction of the zero bracket amount and the general tax credit in the 1977 Act, combined with a substantial increase in personal income in 1978, appears to be responsible for the effective tax rate increase.

Table 1.—Effective Tax Rate, 1949–78 [1]

1949	0.2026	1964	0.2084
1950	.2170	1965	.1966
1951	.2442	1966	.1993
1952	.2604	1967	.2020
1953	.2578	1968	.2018
1954	.2390	1969	.2049
1955	.2342	1970	.2048
1956	.2341	1971	.2076
1957	.2391	1972	.2110
1958	.2327	1973	.2137
1959	.2347	1974	.2191
1960	.2326	1975	.2224
1961	.2350	1976	.2275
1962	.2330	1977	.1890
1963	.2349	1978	.1920

1. Income tax before credits divided by taxable income, both from *Statistics of Income, Individual Income Tax Returns*. Excludes 1968–70 surcharge and 1975 rebate.

Quarterly effective tax rates are obtained by dividing quarterly tax liability before credits by quarterly taxable income. The quarterly tax liability is estimated by use of an estimated elasticity of tax liability with respect taxable income of 1.12 for 1975 and 1976 and 1.41 for 1977 and 1978. Quarterly totals of tax liability are forced to equal annual tax liability. The final liability series is derived by adjusting the quarterly tax liability series for tax credits (including the credit for excess FICA tax withheld), fiduciary income tax, additional tax for tax preferences, recapture and penalty taxes, audit assessments, and finally undercoverage of the SOI data.

Comparison: liabilities and payments

Table 2 shows Federal personal income tax liabilities and payments for 1975–78 and the excess of liabilities

Table 2.—Federal Personal Income Tax Liabilities and Payments Annually and Seasonally Adjusted Quarterly Totals at Annual Rates, 1975–78

[Billions of dollars]

	1974		1975					1976				
	IV	QY	I	II	III	IV	QY	I	II	III	IV	QY
Personal income	1,194.7	1,154.0	1,204.5	1,237.5	1,274.1	1,305.4	1,255.5	1,335.0	1,363.7	1,392.9	1,432.9	1,381.6
Taxable income [1]	595.1	573.8	572.2	585.5	602.8	621.4	595.5	647.2	666.0	682.0	704.3	674.9
Personal income tax liabilities	131.7	126.1	123.5	93.6	120.0	134.1	120.1	138.0	143.1	147.4	153.6	145.5
Less: Excess of liabilities over payments	−.7	−.1	−0.0	−.9	4.1	4.6	−.3	5.7	4.4	2.8	3.4	4.1
Personal income tax payments [2]	132.4	126.2	132.5	94.5	124.9	129.5	120.4	132.4	138.7	144.6	150.1	141.4

			1977					1978				
			I	II	III	IV	QY	I	II	III	IV	QY
Personal income			1,472.5	1,509.0	1,548.5	1,590.4	1,531.6	1,634.8	1,689.2	1,742.5	1,803.1	1,717.4
Taxable income [1]			901.6	923.9	944.3	976.0	936.4	994.5	1018.3	1,064.8	1,125.6	1,063.3
Personal income tax liabilities			154.7	160.1	164.0	172.0	162.1	174.9	180.3	198.0	209.0	193.3
Less: Excess of liabilities over payments			−.8	−.9	2.0	2.3	.5	1.6	5.9	3.3	4.5	3.8
Personal income tax payments [2]			155.6	161.0	162.0	170.6	162.9	173.3	183.4	196.6	205.4	189.4

[1] Annual totals from *Statistics of Income, Individual Income Tax Returns.*

[2] This line is the income tax component of the published personal tax and nontax receipts series.

over payments. In general, the liability series is more responsive to changes in income than the payment series, partly because the timing of nonwithheld and refunds components of the payment series does not coincide with that of taxable income, and partly because graduated withholding rates result in changes in withholdings that are different from those in liability if the income flow changes during a tax year. For example, graduated withholding rates would result in overwithholding if the flow of income were to dip for a few months during a tax year. In general, when income rises, liabilities tend to exceed payments; when income falls, payments tend to exceed liabilities.

From the fourth quarter of 1974 to the first quarter of 1975, liabilities decline $8 billion for two reasons.[2] (1) The tax Reduction Act of 1975 increased the standard deduction for 1975 and introduced the personal exemption credit of $30 per exemption, the refundable earned income credit to certain individuals with earned income less than $8,000, and the housing credit for purchase of a new principal dwelling. (2) Taxable income fell by $23 billion in the first quarter of 1975 due to the recession. As a result, tax payments in the first quarter of 1975 exceed liabilities by $9 billion. Much of the increase in personal income in the first quarter is in farm proprietors' income and reflects an increase in farm inventories. This component of farm income is largely untaxed under the individual income tax.

In the second quarter of 1975, liabilities decline $30 billion and payments decline $38 billion. These declines reflect the May rebate of $32 billion on 1974 tax liabilities. The rebate is treated identically in the liability and payment series, even though a strict liability treatment would require a reduction of 1974 liabilities. The rebate was not conceived until 1975 and was intended to reduce 1975 liabilities and stimulate 1975 spending. Thus, it is shown as reducing tax liabilities at the time of payment, mostly in the second quarter of 1975.

In the first half of 1976, tax liabilities exceed payments by about $5 billion. The excess is partly due to the continued recovery from the recession of 1974–75 and partly due to lower net final payments resulting from provisions of the 1975 Tax Reduction Act.

Three provisions of the 1977 Act significantly reduced tax liabilities in 1977: (1) a zero bracket amount was introduced to replace the standard deduction in effect for 1976 and earlier years, (2) the general tax credit was extended to cover exemptions for age and blindness, and (3) a new jobs credit was enacted to encourage businesses to hire additional workers. On a liability basis these provisions of the 1977 Act became effective January 1, 1977 but actual tax payments were not reduced until withholding rates were reduced on June 1, 1977. As a result, tax payments exceed liabilities in the first half of 1977 by about $1 billion. In the second half of 1977, the excess of liabilities over payments is about $2 billion, reflecting the June 1 withholding rates reduction and continued growth in personal income.

In the first quarter of 1978, heavy refunds resulting from the 1977 Act limited the increase in tax payments to only about $3 billion. Tax liabilities also show only a small increase of $2 billion in that quarter but for a different reason. The Energy Tax Act of 1978 introduced the residential energy credit retroactive to April 20, 1977. However, the entire amount of the tax credit claimed on energy saving expenditures made from April 20, 1977 to December 31, 1977 is shown as reducing tax liabilities in the first quarter of 1978.

An increase of about $3 billion in income tax credits occurred in 1978. The increase was partly due to more use of certain existing tax credits—the investment tax credit, the foreign tax credit, and the targeted jobs credit—and partly to introduction of the residential energy tax credit. These tax credits reduced liabilities starting with the first quarter of 1978 but did not reduce payments until the first half of 1979, because no change in withholding rates occurred. Nonetheless, tax liabilities exceed payments by about $4 billion throughout 1978 as the effect of a rapid increase in income in 1978 apparently outweighed that of the increase in tax credits. In 1978, personal income rose by 12.1 percent and taxable income by 13.6 percent. Under such conditions tax liabilities usually exceed payments. The increase in tax liabilities (18.5 percent) was larger than the increase in tax payments (16.7 percent) in 1978.

2. Quarterly estimates of payments and liabilities are expressed at seasonally adjusted annual rates, and quarterly changes in them are differences between those rates.